GUANA TOLOMATO
MATANZAS
NATIONAL ESTUARINE
RESEARCH RESERVE

PLANNING FOR SEA LEVEL RISE ON THE FLORIDA COAST

Stay in touch

The National Estuarine Research Reserves (NERRS) Science Collaborative is committed to sharing information about the projects we fund in the most effective way we can. Updates about this project will be communicated through nerrs.noaa.gov, webinars, conferences, and meetings. If you would like to stay in touch with this project, contact our program coordinator Cindy Tufts: cindy.tufts@unh.edu

For questions about the applied science aspect of this project, contact Kathryn Frank, University of Florida: kifrank@ufl.edu —or—Michael Shirley, manager, Guana Tolomato Matanzas NERR: michael.shirley@dep.state.fl.us

For questions about the collaborative process being used to generate data and restoration planning tools that are relevant to intended users, contact Dawn Jourdan, University of Oklahoma: dawnjourdan@ou.edu

What's happening?

Florida's Guana Tolomato Matanzas National Estuarine Research Reserve (GTM NERR) and the University of Florida have received a grant to work with Matanzas Basin stakeholders to plan for sea level rise in a way that protects communities and the environments they depend on for quality of life and commerce. Follow the team's work at: planningmantanzas.org.

The team is using a structured collaborative process to work with planners, property owners, and scientists to identify areas of conflict and agreement related to sea level rise, develop land use scenarios to illustrate the results of different planning decisions, and communicate these scenarios to the general public. Ultimately their goal is to develop a balanced, stakeholder-driven process of planning for sea level rise that can be used throughout the state and serve as a model for other regions.

Investigators from this project discuss coastal management issues with local stakeholders in Florida's Matanzas Basin.

Why this project?

Even small increases in sea level rise can damage infrastructure and property, threaten public health and safety, impact local economies, and alter habitats. A common response to this threat is to armor the shoreline with structures like bulkheads and dikes, and eventually, to retreat to higher elevation. For the commercially and biologically important animals that currently thrive in Florida's estuaries, survival depends on access to natural corridors for retreat.

Yet in Florida's low lying and vulnerable coastal communities, strategies to protect people and wildlife from sea level rise are not well integrated into the planning and decision-making process. This lack of coordination is due, in part, to the high level of uncertainty about sea level rise and its impacts. It is also influenced by state law, which only requires counties to prepare plans with time horizons of 10 years.

The 100,000-acre Matanzas Basin presents a unique opportunity to develop a model process for longer-term sea level rise planning that balances the needs of communities and ecosystems. Only ten percent of this highly threatened and valued coastal area is developed; the rest is given over to natural areas. This provides local communities with more flexibility to develop plans and land use scenarios that integrate natural systems.

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Left: Pellicer Creek Aquatic Preserve. Right: Pellicer Creek and uplands. A large percentage of uplands in the Matanzas Basin are working forests, where ongoing silvicultural activities bring biological and economic concepts together to prescribe and apply treatments to help reach land management objectives.

About the funder

The National Estuarine Research Reserve System (NERRS) Science Collaborative puts Reserve-based science to work for coastal communities coping with the impacts of land use change, stormwater, nonpoint source pollution, and habitat degradation in the context of a changing climate. Our threefold approach to connecting science to decision making includes:

- Funding: We award an average of $4 million annually to projects that incorporate collaboration and applied science to address a coastal management problem.
- Transfer of knowledge: We are committed to sharing the knowledge generated by the local, place-based research we fund. If you're interested in following this project, contact cindy.tufts@unh.edu.
- Graduate education: We sponsor two fellowships in TIDES, a Master's of Science program at UNH that provides the skills needed to effectively link science to coastal decision making.

The program operates by a cooperative agreement between the University of New Hampshire (UNH) and the National Oceanic and Atmospheric Administration.

Learn more at....
nerrs.noaa.gov/
Science Collaborative.aspx

How does this project work?

The project team is using a structured collaborative process to engage stakeholder input at three levels: 1) a steering committee including a representative of northeast Florida counties, city planners, land owners, and residents who provide input to help shape planning scenarios, visualizations, and communication products; 2) focus groups comprised of broader sets of land-owners, residents, planners, and officials who provide another layer of input; and 3) a public meeting that allows the general public to learn about, and provide reactions, to the tools developed for sea level rise planning in the Matanzas Basin.

From this broad base of stakeholder input, the project team and partners are developing and testing a process for sea level rise adaptation that integrates ecological and built environments and prioritizes areas where habitat migration corridors are viable. As part of this process, they identify the behavioral, social, and institutional factors that influence the willingness and ability of stakeholders, planners, and public officials to conduct habitat vulnerability assessments and apply adaptive conservation designs.

The resulting model process will be packaged as a "guidebook" to help planners and other stakeholders address the technical and collaborative aspects of sea level rise adaptation planning. It will include techniques to identify and negotiate local land use conflicts, strategies to conduct "readiness assessment" for further adaptation planning, and a plan to transition these efforts into policy.

Ultimately, the model process guidebook, methodologies, and best practices developed through this project will be evaluated to ensure robustness and transferability to the NERR System, state planning and natural resource management agencies, and other coastal areas.

Aerial image of the town of Marineland and the Intracoastal Waterway within the Matanzas Basin. Located on the coastal strand, the town may be vulnerable to impacts from sea level rise.